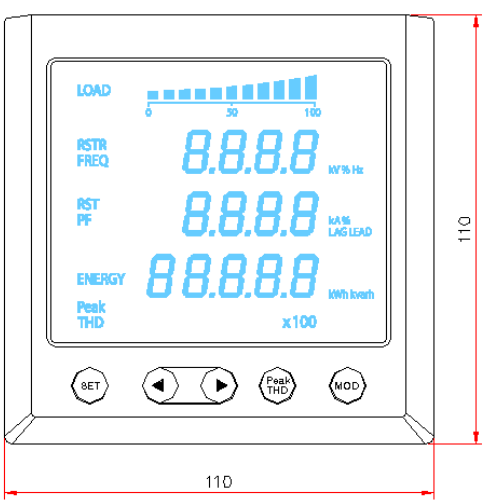
Digital Power Meter

(DPM-B100)

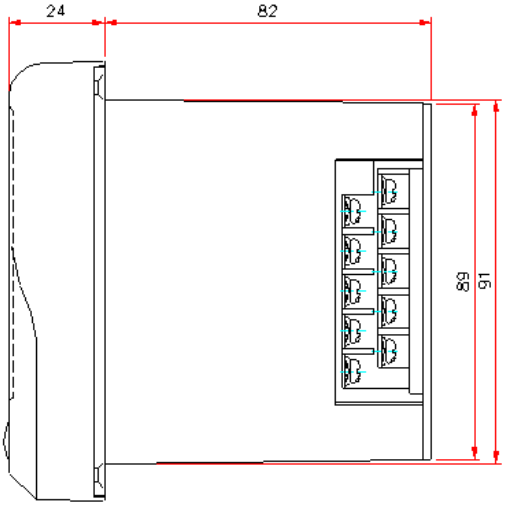
User's Manual

PNC TECH

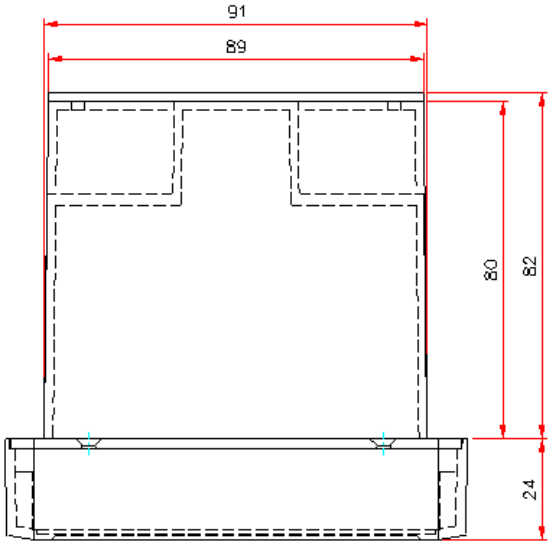
1. Dimensions



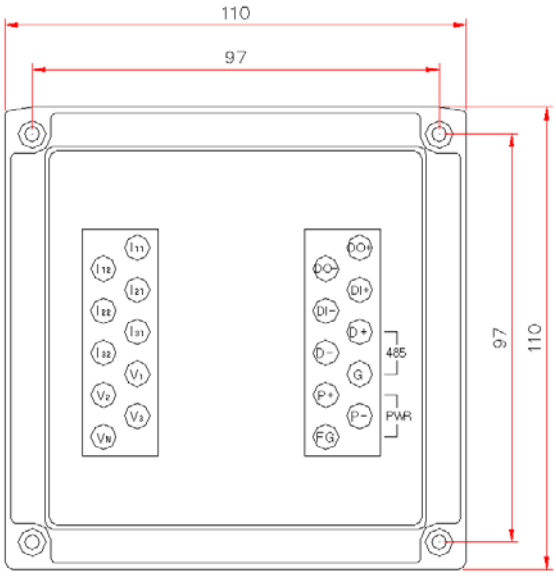
Front



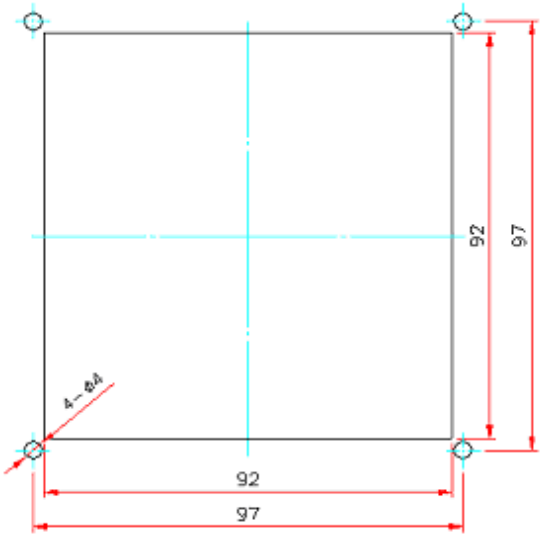
Side



Top



Rear



Cut-out of Panel

Note

Mounting the Power Meter

1. Fit the meter into the cutout.
2. Insert each screw through the drilled hold on the mounting surface and into its corresponding metal insert located on the back of the meter.
3. Do not fasten tightly.

2. Technical Data

1) General Specifications

ITEM		DPM-B100
Wiring Type		1P2W, 1P3W, 2P3W, 3P3W, 2P4W, 3P4W
Input	Current	5A, 1A (Option)
	Voltage	30 ~ 380V
	Rated Input	85~264V (Free Voltage: AC/DC)
	Frequency	45~65 Hz
	Power Consumption	Max.10W
	Burden	PT < 0.5 VA CT < 0.1 VA
Temperature	Operation	-20 ~ 70 ℃
	Storage	-30 ~ 80 ℃
	Humidity	5 ~ 95 %
Communication	RS485	Rear 1 Channel
Insulated resistance		DC 500V 100 ㏁ and over
Power frequency withstand voltage		AC 2 ㎸ /1 for 1 minute
Lightning impulse withstand voltage		AC 5 ㎸ for 1.2 X 50 ㎲ and over
Overload withstand Capacity	Current Circuit	Rated amp. x 2 for 3 hours Rated amp. x 20 for 2 seconds
	Voltage Circuit	Rate volts x 1.15 for 3 hours
Application standard		IEC Standards (IEC 61000)
Weight		0.54 ㎏

2) Metering Functions

ITEM		DPM-B100
Measurement	Voltage	RMS
	Current	RMS
	Power	Active, Reactive
	Energy	Active, Reactive
	Power Factor	Lead, Lag
	Load Factor	LED Bar Graph
	Frequency	Measurement
Communication	RS-485	Modbus
Pulse Out	Energy	Wh, Varh
I/O Contact No.	Digital Input	1
	Digital Output	1

NOTE

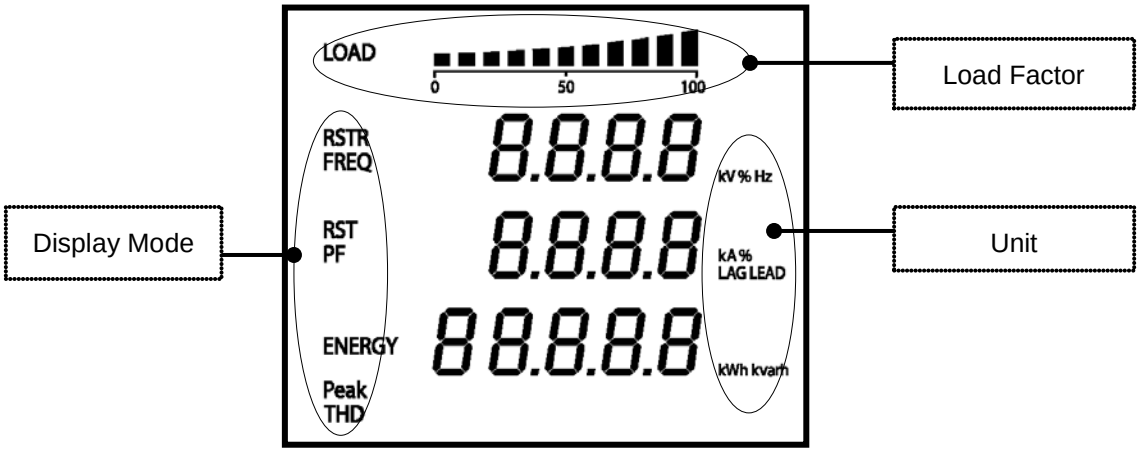
* The Power Meter allows you to select DO channel from three Modes, It consists of three types – Wh, Varh, DO. Please refer to the operation of this mode on the Chapter 5. for details

* If you want to confirm the state of DO and DI, you should connect the D+/D- channel of the rear Terminal Blocks to PC.

* To accurately **measure** the values, you should apply the current and voltage of A phase to Meter.

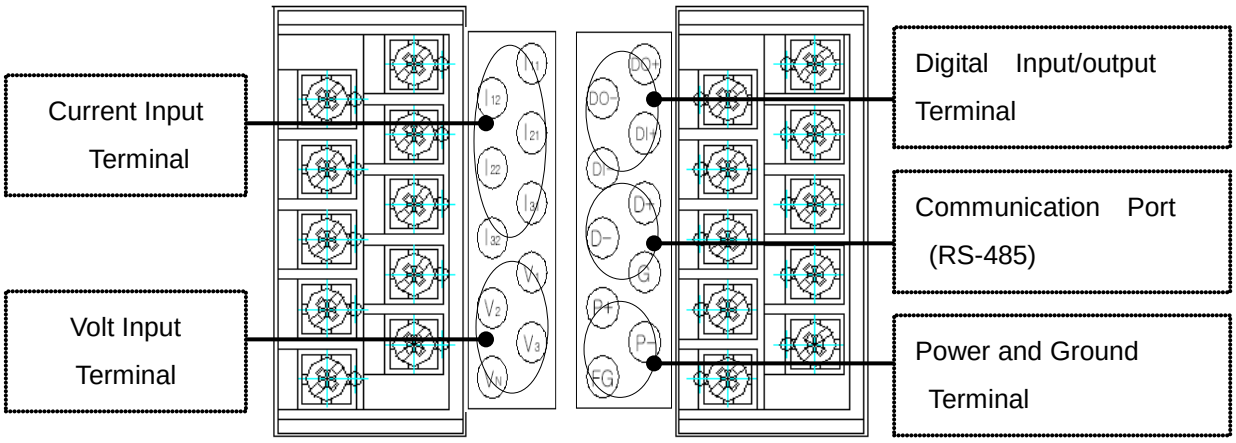
3. Appearances Overview

1) Front View of LCD



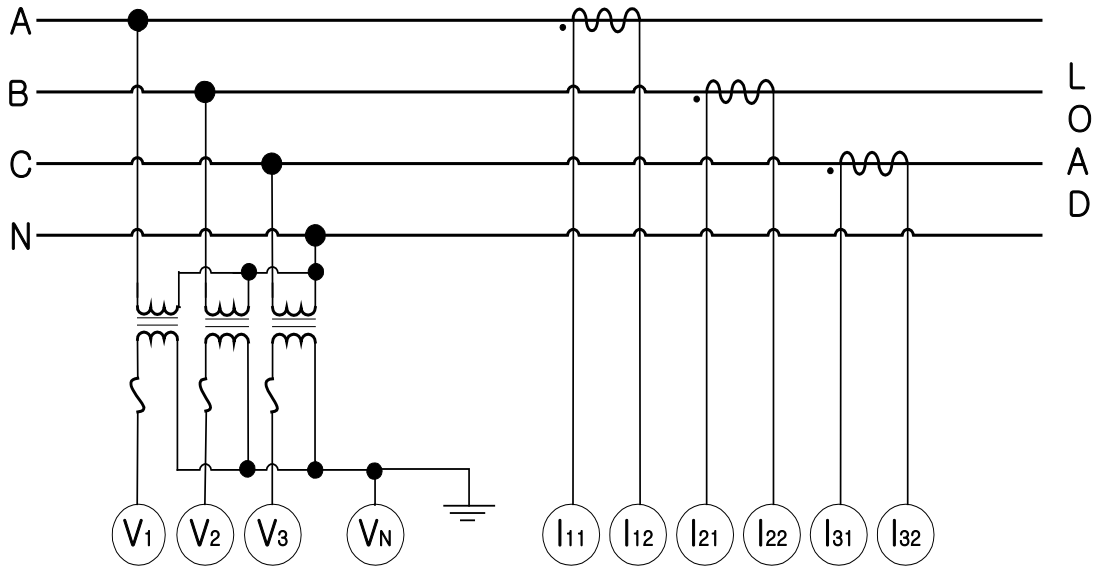
- **The unit of Active power MW is "kw k".**
- **The unit of Reactive power MW is "k kvar"**
- **When the measurement range is over, "--------" is marked.**

2) Rear View of Terminal Blocks

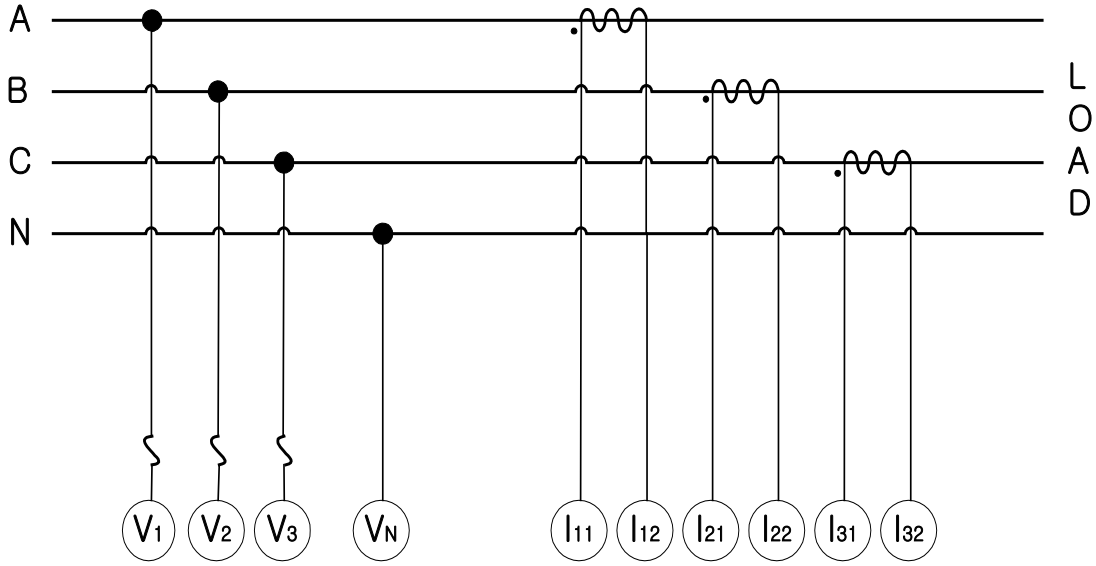


4. Wiring Diagrams (Voltage & Current)

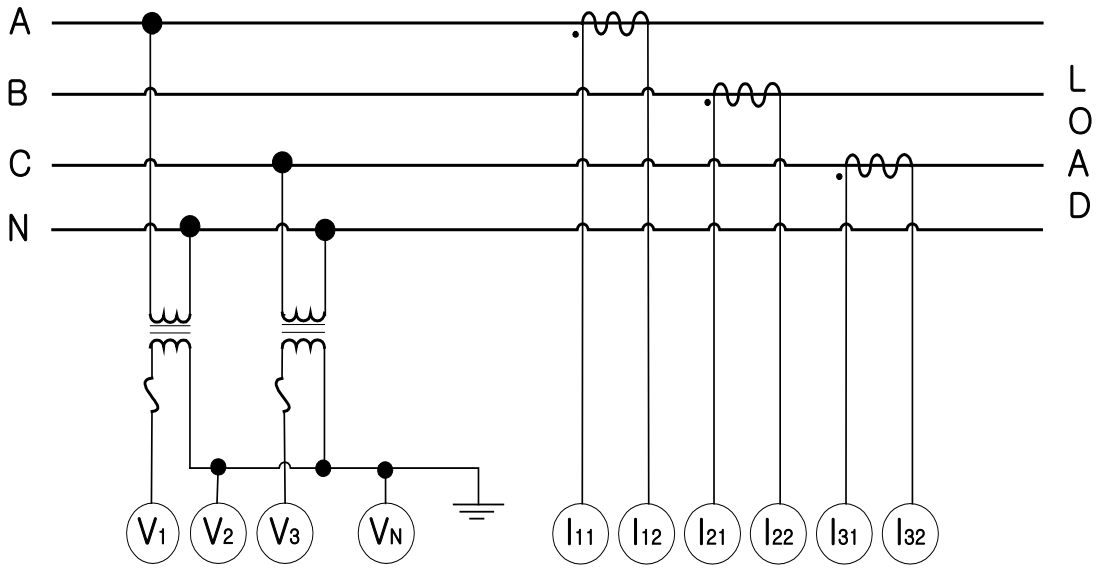
① **3-phase, 4-wire (3PT, 3CT)** : PT Conn-STAR



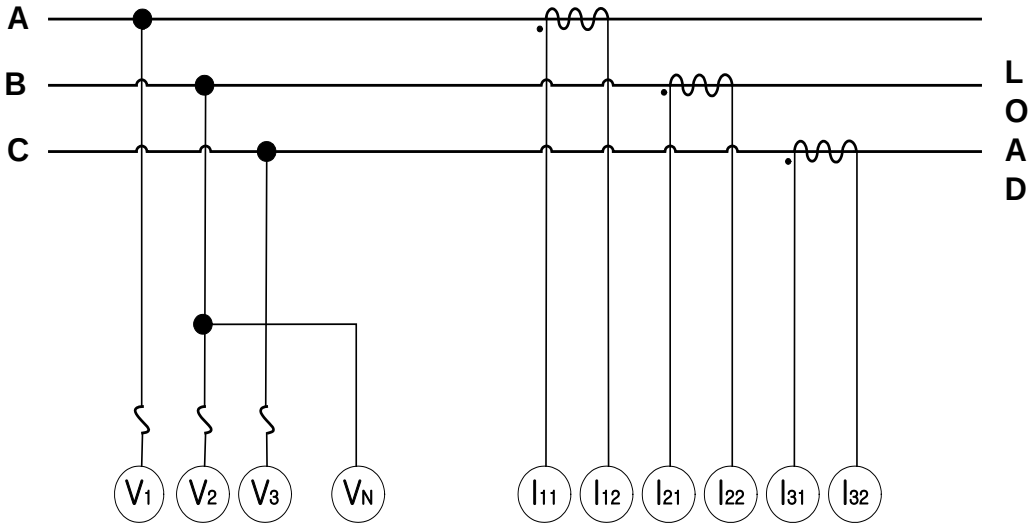
② **3-phase, 4-wire (Direct wiring)** : PT Conn-STAR



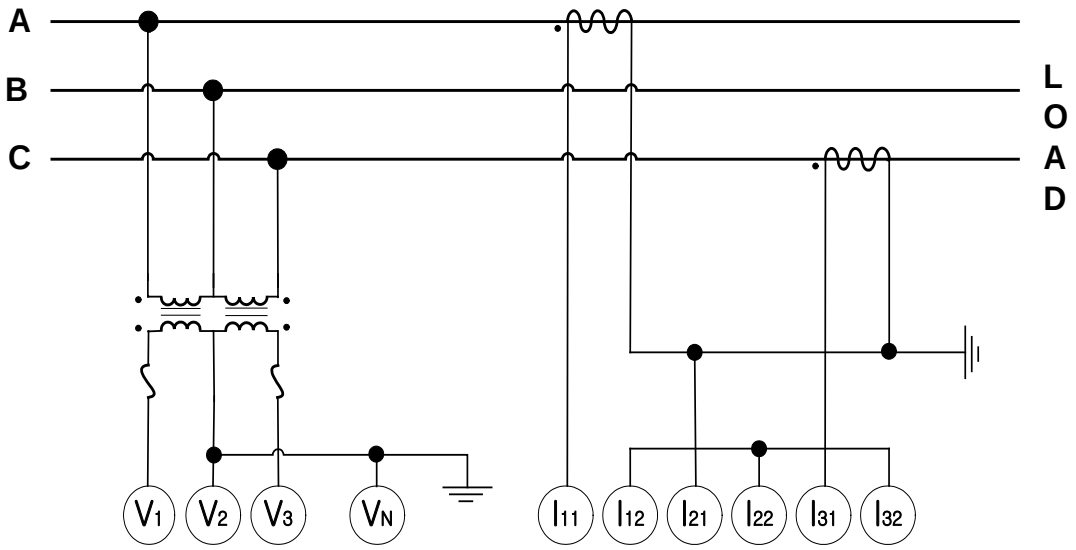
③ **3-phase, 4-wire (2PT, 3CT)** : PT Conn-2PT



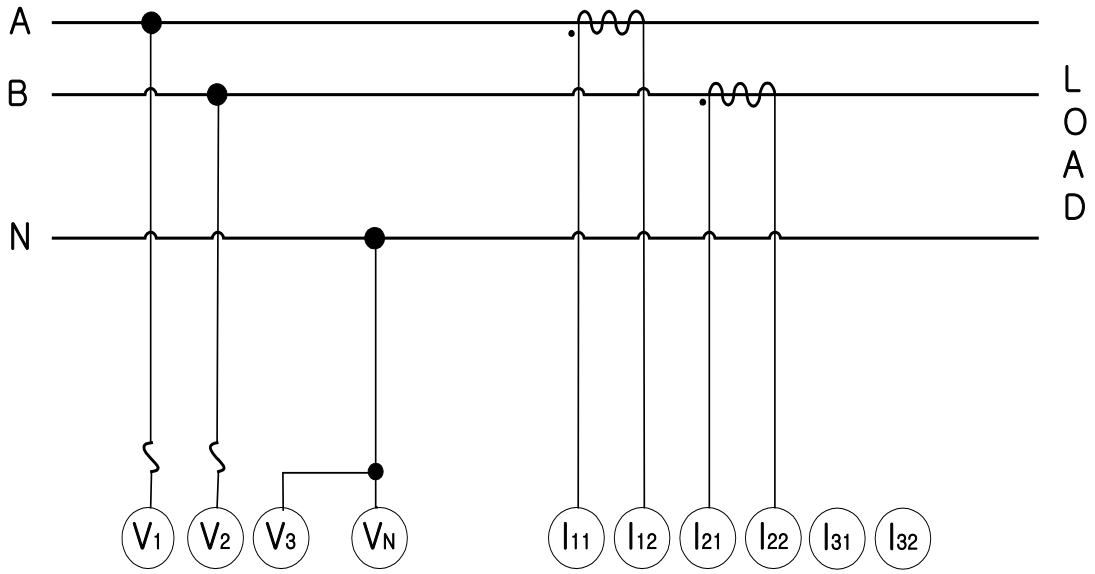
④ **3-phase, 3-wire (Direct wiring)** : PT Conn-dELTR



⑤ **3-phase, 3-wire (2PT, 2CT)** : PT Conn-dELTR



⑥ **Single-Phase, 3-wire (Direct wiring)** : PT Conn-STAR



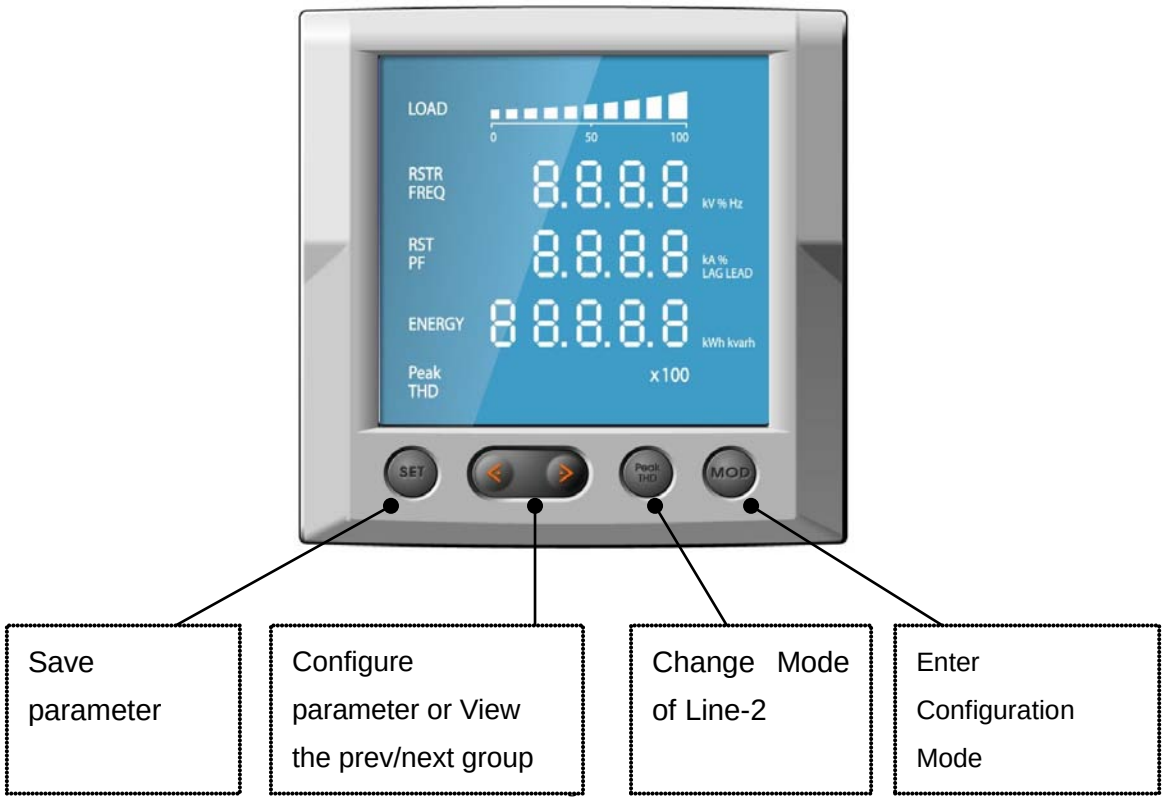
5. Setting & Configuration, LCD Operations

- It is to be classified into two items.

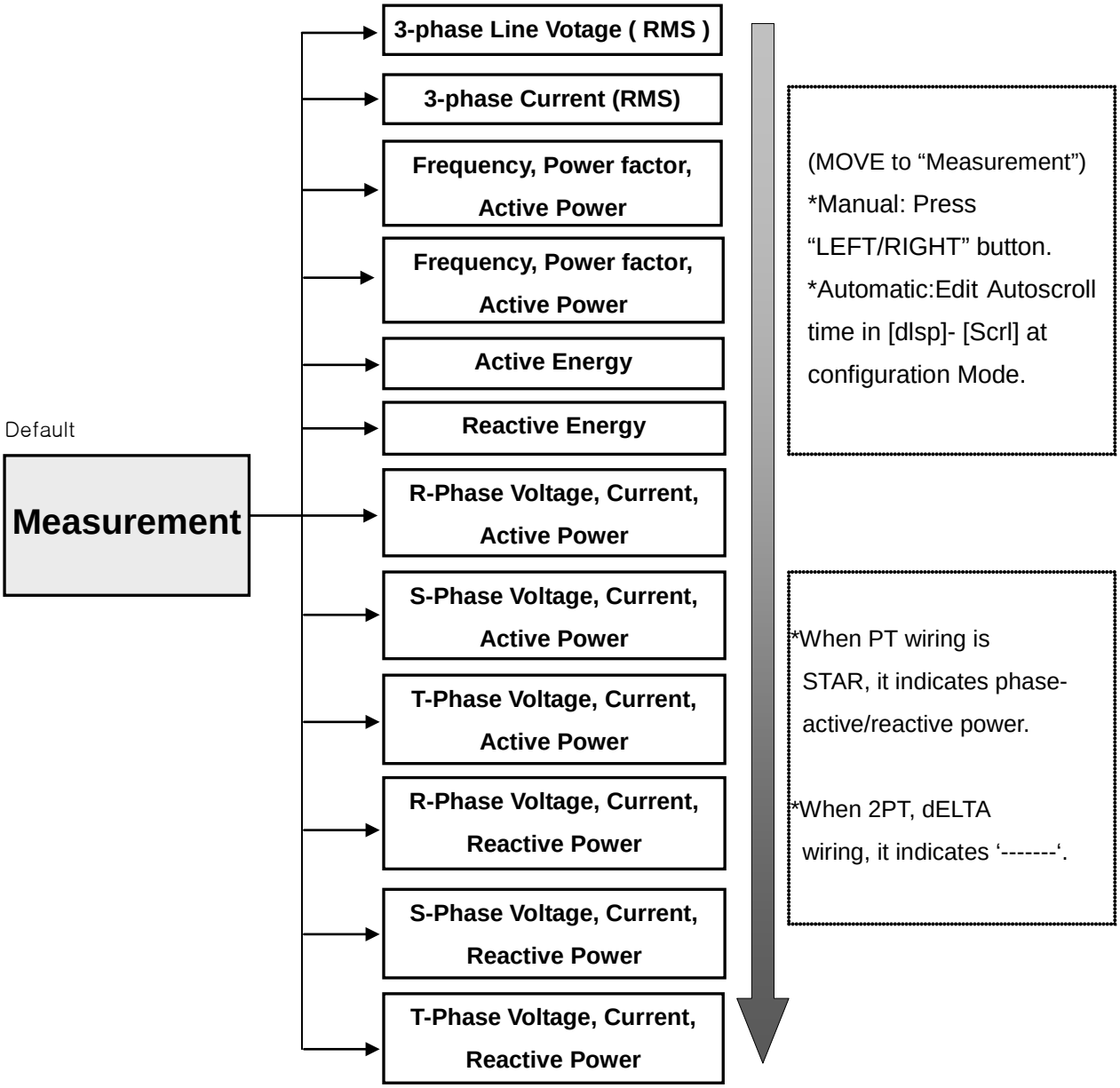
① **Measurement Mode (Default):** Indicates the voltage, current, active/reactive power, active/reactive energy, frequency , power factor, etc.

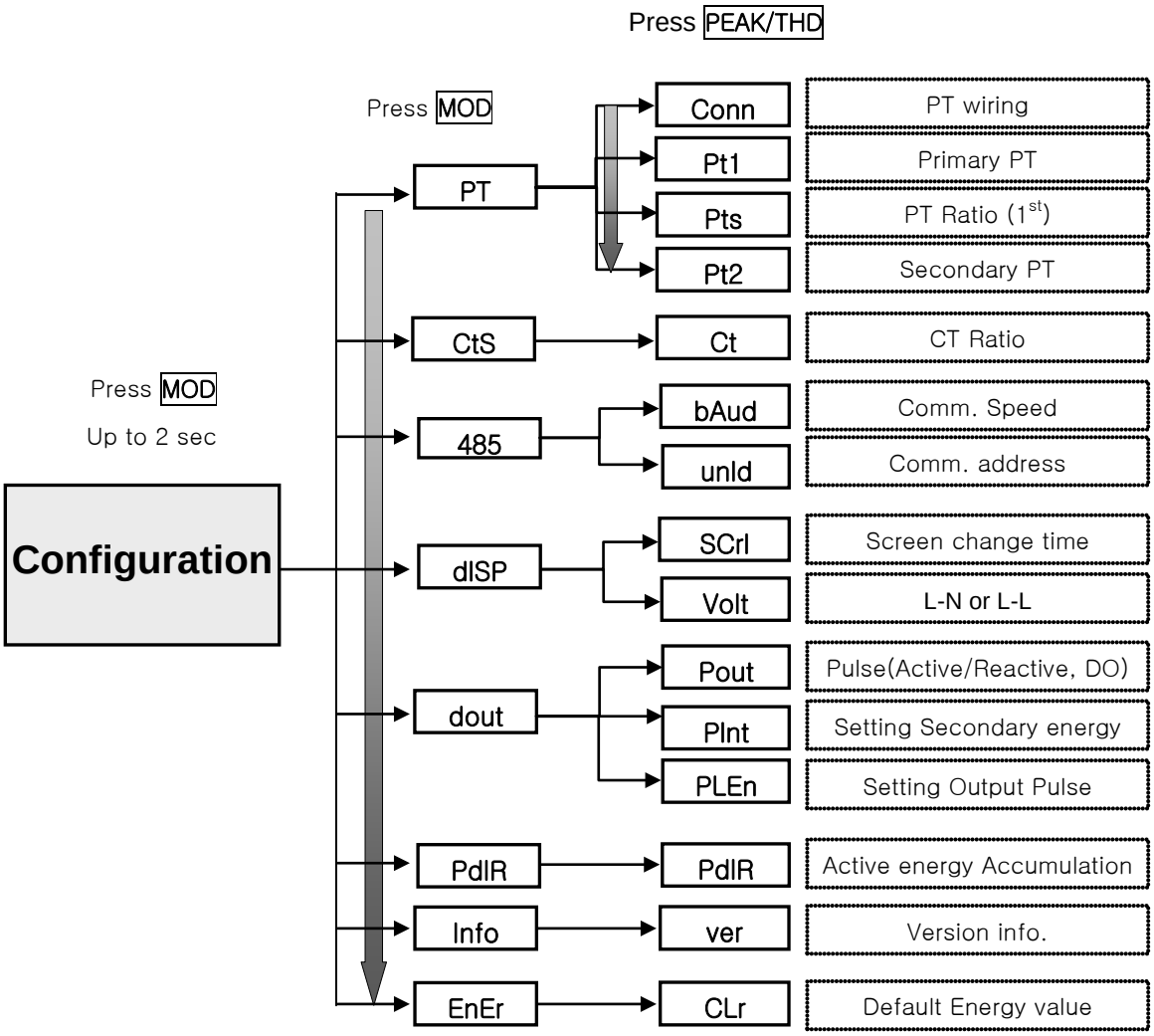
② **Configuration Mode:** Configure a parameter and indicates a version Information.

	Item	Display	Range	Unit
Voltage	RMS	RS, ST (Line Voltage)	20.0 ~ 9,999	V, kV
Current	RMS	R, S, T	0.000 ~ 9,999	A, kA,
Frequency		FREQ	45.00 ~ 65.00	Hz
Power Factor	3-phase	PF	0.00 ~ 1.00	LEAD(-), LAG(+)
Power	Active	NONE	-9,999~9,999	kW, kW k (MW)
Power	Reactive	NONE	-9,999~9,999	kvar, k kvar (Mvar)
Energy	Active/Reactive	ENERGY	0.0~999,999,999,999.9	kWh, kVarh
Load Factor	3-phase	BAR LED	0~100 %	BAR GRAPH (%)



< Menu Tree>


Default
Measurement
3-phase Line Votage (RMS)
3-phase Current (RMS)
Frequency, Power factor, Active Power
Frequency, Power factor, Active Power
Active Energy
Reactive Energy
R-Phase Voltage, Current, Active Power
S-Phase Voltage, Current, Active Power
T-Phase Voltage, Current, Active Power
R-Phase Voltage, Current, Reactive Power
S-Phase Voltage, Current, Reactive Power
T-Phase Voltage, Current, Reactive Power
(MOVE to "Measurement")
*Manual: Press "LEFT/RIGHT" button.
*Automatic:Edit Autoscroll time in [dlsp]- [Scrl] at configuration Mode.
*When PT wiring is STAR, it indicates phase-active/reactive power.
*When 2PT, dELTA wiring, it indicates '-------'.



Note

Press "SET" button to save the change value

1) Configuration Mode

Condition	Display	Description	Range	Default
LINE-1	**LINE-2**		**LINE-3**	
PT Ex1)	Conn	Wiring Type	dElt (wiring Delta) Star (3-Wire: wiring Y) 2PT (wiring V)	Star
	Pt1	PT1 (Primary)	1 ~ 9999 (step 1)	380
	Pts	PT1 (Scale)	1, 100	1
	Pt2	PTS (Secondary)	100~380 (step 1)	190
CTs	Ct	CT ratio	1 ~9999 (step 1)	1
485	bAud	Comm. speed	1200, 2400, 4800, 9600, 19200, 38400	9600
	unid	Comm. address	1 ~ 255 (step 1)	1
dISP	Scrl	Screen change time	0 ~10 (step 1)	0
	Volt	Voltage display	L-n (Phase Voltage) L-L (Line Voltage)	L-L
dOut Ex2)	Pout	Setting energy	ACt-H(Active), Uar-H(Reactive) , DO	DO
	Plnt	Secondary energy value	1~2000Wh	100Wh
	PLEn	Setting output pulse	30~200 mS	30
PdlR	PdlR	Energy Accumulation	Pos(+), Both(+,-)	Pos
Info	ver	Version info.		5.00
EnEr	CLr	Default Energy value	no, YES	no

- Ex1)
  When PT 22.9KV/√3 :190V/√3, set PT1=229, PTS=100, PT2=190.
  When PT 380V/√3 :190V/√3, set PT1=380, PTS=1, PT2=190.
  When CT 400A:5A, set CTS=80.

- Ex2)
  Please noted that setting energy pulse outputs secondary value.

PNC Technologies Co.,Ltd.

#898-43, Hogye-dong, Dongahn-gu, Anyang, Kyongki-do, 431-080, Korea
Tel: 82-31-452-5791 Fax: 82-31-452-5793
Website: www.pnctech.co.kr